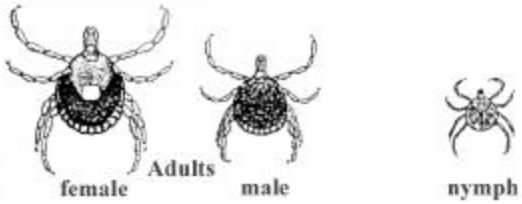
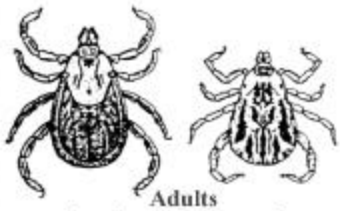
Protect Yourself from Tick-Borne Diseases

Ticks can carry and transmit (vector) a wide variety of disease-causing organisms (pathogens). Different kinds (species) of ticks generally transmit different pathogens, that is, they are considered vectors for specific disease organisms. Some ticks can be vectors for more than one kind of pathogen.

Not all ticks are infected, so a tick bite does not necessarily mean you will get a disease. In addition, even if a tick is infected, it must be attached to your skin for at least several hours before it can successfully transmit the pathogens to you. Therefore, the sooner you remove attached ticks, the safer you will be.

Tick Species and Life Stages Most Likely to Bite Humans in the U.S. and the Diseases They May Cause

Tick Species	Disease	Pathogen
 *Ixodes scapularis* (black-legged tick, also known as deer tick)	Lyme disease Human granulocytic ehrlichiosis Babesiosis	*Borrelia burgdorferi* *Ehrlichia* sp. *Babesia microti*
 *Amblyomma americanum* (Lone Star tick)	Human monocytic ehrlichiosis Lyme disease-like illness	*Ehrlichia chaffeensis* *Borrelia* sp.
 *Dermacentor variabilis* (American dog tick)	Rocky Mountain spotted fever	*Rickettsia rickettsii*

There are additional tick species that bite humans in limited areas of the United States. They include: *Ixodes pacificus* (western black-legged tick) which looks identical to *Ixodes scapularis* and transmits the same or closely related pathogens as that tick species, but is present only in the Pacific Coast states; and *Dermacentor andersoni* (Rocky Mountain wood tick), which looks very similar to *Dermacentor variabilis*, and transmits RMSF, but only in the Rocky Mountain states.

Ticks go through several stages in their life cycle: egg, larva, nymph, and adult (male and female at this stage). For all tick species, the larva is very tiny (a mere speck), the nymph is a little larger (but still very small, about the size of a pin head), and the adults are larger and easy to see. Although larval ticks will bite man, they rarely transmit pathogens, but both nymphs and adults may do so. Nymphs are of greatest concern, owing to their small size which makes them easy to overlook.

A tick needs a blood meal from a host in order to molt (progress to the next stage of it's life cycle), and to reproduce (mate and lay eggs) as adults. This feeding process continues for several days to a week until the tick is fully engorged with blood. It then releases it's hold from the host, drops off, and subsequently molts or lays eggs. If the tick is infected with pathogens, it can transmit the infection to the host (this could be you!) during the feeding process.

DO THIS:

Wear the proper clothing:

- Long pants tucked into boots or socks;
- Long sleeves;
- Shirt tucked into pants;
- Light-colored clothing makes it easier to spot ticks.

Use these safe and effective insect repellents:

- Treat clothing with permethrin repellent. When ticks crawl onto the fabric, they absorb a tiny amount of permethrin, making them too sick to bite you. Follow application directions on the repellent label. For military uniforms, order aerosol (NSN 6840-01-278-1336), or impregnation (IDA) kit (NSN 6840-01-345-0237).

- Apply deet repellent to skin that is not covered by clothing. Follow application directions on the label. Order NSN 6840-01-284-3982.

Check yourself for ticks routinely:

- Use the buddy system;
- When you go indoors, remove your clothes and shower, checking your skin carefully;
- You can place your clothes in a hot dryer for 20 minutes to ensure that any ticks you failed to notice will be killed;
- Check children and pets carefully.

Remove attached ticks immediately:

- Grasp the tick's mouthparts as close to the skin as possible with fine-tipped tweezers; pull back slowly and steadily with firm force until the barbed mouthparts can be eased out of the skin. Be patient.
- DO NOT squeeze the body of the tick as this may force infective fluid into you.
- DO NOT apply any substance, including petroleum jelly, finger nail polish, finger nail polish remover, repellents, pesticides, or a lighted match to the tick while it is attached. These materials are either ineffective, or worse, might agitate the tick, causing it to regurgitate infective fluid into the bite site.
- Wash the bite site and apply an antiseptic.
- Save the tick for future identification should you develop disease symptoms. Preserve it by placing it in a clean, dry jar or other container and keeping it in the freezer. Discard after one month as all known tick-borne diseases will generally display symptoms within this time period.
- If you develop flu-like illness or otherwise feel sick following a tick bite, seek medical attention immediately.

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